Solar Control, Safety and Security Window Films: **Tech Bulletin**

Energy Toolbox

DEALER

Energy Toolbox designed to quantify energy savings

Solar Gard® window film provides one of the top energy-saving solutions for building retrofit. Once the window film has been installed, energy use and the associated costs decrease and interiors become more comfortable. Energy rebates and tax credits can provide immediate savings, while energy savings and comfort benefits go on for years to come.

Now Solar Gard offers an Energy Toolbox to help quantify the energy-saving and comfort aspects of window film.

Energy modeling

Commercial property owners and managers will often request evidence of energy and cost savings before investing in solar control or Low-e window film. Solar Gard offers a suite of sophisticated energy modeling software tools that simulate projected energy and financial savings due to window film installation. Decision makers can receive a custom energy analysis report which includes information on energy savings, financial savings, carbon footprint reduction, simple payback, and multiple other benefits of window film.

Energy modeling can be time consuming and costly, requiring specialized software and trained analysts. That's why Solar Gard Technical Services has developed a comprehensive Energy Toolbox and will help you create a custom strategy to quantify the benefits of window film and prove the value of the investment to your clients.

On the Orlando Radisson, Solar Gard window film rejects up to 75% of the sun's total solar energy, while blocking almost 100% of ultraviolet light. Approximately 70,000 square feet of Solar Gard Stainless Steel 10 was installed for its progressive performance qualities. In addition to the 20% reduction in energy usage, there were many other valuable benefits from the installation, such as reduced heat, glare and increased protection against fading of the furnishings inside the hotel.

Toolbox software

To perform energy analysis on a variety of structures from residences to large complex projects, Solar Gard Technical Services has put together a suite of energy modeling tools that range from quick and simple estimates for a residential client to detailed whole building energy analysis for architects and building engineers.

The Energy Savings Calculator is a proprietary residential and small commercial building tool for consumers on the Solar Gard website. It outputs a pdf report that contains local dealer contact information and can be emailed to the consumer.

CAPSHOT™ is a proprietary energy modeling tool designed by Technical Services that uses hourly thermal stresses on the windows (temperature and radiation) to calculate the cooling and heating load. CAPSHOT provides a balance between speed and accuracy allowing a report nearly as accurate as a whole building simulation to be shared with a customer in a fraction of the time.

EFILM was developed for the manufacturer members of the IWFA, and runs on the EnergyPlus simulation engine. Since the manufacturer members of the IWFA have access to this software reports generated by it can be found in the field.

CAPSOL™ is a proprietary whole commercial building thermal simulation tool exclusive to Solar Gard. CAPSOL is a sophisticated program that outputs detailed temperature and energy data. CAPSOL uses reliable, industry approved standards for all calculations, including DOE-2 and ASHRAE 90.1 calculation procedures.

Toolbox support

The Solar Gard Technical Services team provides several supporting resources including:

- Technical services energy consulting, especially for large commercial opportunities
- Up to date information on energy and window film standards and legislation, such as:
  - Tax rebate programs
  - Utility rebates and incentives
  - LEED and EnergyStar certifications

Toolbox process

To get started, you should download the Fenestration Energy Analysis Form (FEA) from the Dealer's Corner on the Solar Gard website (www.solargard.com/dealers) and complete the required information about the project.

If you're a bit overwhelmed by the whole process, reach out to your Solar Gard sales representative.

Solar Gard® SAINT-GOBAIN

SOLAR GARD® ENERGY MODELING SOFTWARE COMPARISON 2014

TARGET USER	CAPSHOT	EFILM	CAPSOL	WEB CALCULATOR
Solar Gard Tech. Service	X	X	X	US Only
Solar Gard Sales	*	*		US Only
Distributors/Dealers		US Only**		US Only
Consumers/End Users				US Only

* Contact your regional sales manager for energy analysis

** Software available to Solar Gard Elite distributors and dealers, contact your architectural sales manager for details

USER EXPERIENCE	CAPSHOT	EFILM	CAPSOL	WEB CALCULATOR
Access	Offline	Offline	Offline	Internet
Time	15 min.	2 hrs. *	2 days + *	5 min
Relative accuracy	Medium	High	High	Low

* Fenestration Energy Analysis (FEA) form submittal to Technical Services group is required

TARGET SEGMENT	CAPSHOT	EFILM	CAPSOL	WEB CALCULATOR
Residential	N	N	N	Y
Small Commercial	Y	Y	N	max 20,000ft²
Large Commercial	Y	Y	Y	N

KEY INPUTS	CAPSHOT	EFILM	CAPSOL	WEB CALCULATOR
Location (country, state, city)	Y	Y	Y	Y
Custom building shape	n/a	Y	Y	N
Occupants/ free heat	Y	Y	Y	N
Weather file type	Radiation	TMY2	TMY2	TMY2
Window area	Y	Y	Y	Y
Window shading	N	Y	Y	N
Floor area	n/a	Y	Y	Y
Floor area limit	n/a	unlimited	unlimited	max 20,000ft²
Multiple floor support	Y	Y	Y	N
Electric cost	Y	Y	Y	N
Gas cost	Y	Y	Y	N
HVAC efficiency	Y	Y	Y	N

KEY OUTPUTS	CAPSHOT	EFILM	CAPSOL	WEB CALCULATOR
Energy use - Cooling	Y	Y	Y	Y
Energy use - Heating	Y	Y	Y	Y
Dollars saved (simple payback)	Y	Y	Y	Dollars Saved Only
Greenhouse gas emission	Y	Y	Y	Y
Peak load reduction	N	Y	N	N
Temperature reduction (comfort)	N	N	Y	Y
Glare reduction	N	N	Y	N
Fade reduction	N	N	Y	Y
Glass temperature	N	N	Y	N

REPORT FORMATS (WINDOWS PC)	CAPSHOT	EFILM	CAPSOL	WEB CALCULATOR
Adobe PDF	manual	Y	manual	Y
Web				Y
Languages	English, Swedish, French	English Only	English, Swedish, French	English

www.solargard.com/us

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